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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/663,995	09/18/2000	H. Kenneth Staffin	2453-80A	4548

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EXAMINER

DOROSHENK, ALEXA A

ART UNIT PAPER NUMBER

1764

DATE MAILED: 11/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/663,995

Applicant(s)

STAFFIN ET AL.

Examiner

Alexa A. Doroshenko

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 12-25 is/are pending in the application.
- 4a) Of the above claim(s) 12-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 7, 2003 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 2 and 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bickford et al. (US 6,253,830 B1) in view of Menon et al. (5,908,804).

With respect to claims 1 and 2, Bickford et al. discloses a fluid bed (6) reactor for a furnace (7) for heat treating parts (col. 1, lines 8-12) comprising a fluid bed (6) in a furnace (7) including at least one door for entry (13, 14) and exit (15, 16) of parts (17) and a gas phase distributor (5) discharging into the fluid bed of granular solids (6) (col. 5, lines 32-46). Bickford et al. fails to disclose a gas distributor which comprises a plurality of tuyeres coupled to and mounted beneath the piping array in a perpendicular orientation.

Menon et al. discloses a fluidizing apparatus in which combustion takes place and wherein the gas distributor comprises a plurality of tuyeres (20) coupled to and mounted beneath a piping array (18) in a perpendicular orientation with openings in the bottom portion thereof and teaches that such an orientation achieves enlargement of the combustion zone (such an orientation can be seen in fig. 1-4; col. 5, lines 57-60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the gas distributor of Menon et al. in the apparatus of Bickford et al. in order to enlarge the combustion region in the fluidized bed of particles so as enhance Bickford et al.'s fluidized bed to debond sand cores (col. 5, lines 38-60).

With respect to claim 4, Bickford et al. discloses wherein metal castings (17) (col. 2, lines 63-65) are in the fluid bed of granular solids (6) (col. 5, lines 34-37).

With respect to claim 5, Bickford et al. discloses wherein the metal castings with sand cores (col. 3, lines 42-45) in the fluid bed of granular solids (6) (col. 5, lines 31-37).

With respect to claims 6 and 7, Bickford et al. discloses wherein the metal parts/castings are of aluminum (col. 3, lines 42-45).

5. Claim 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bickford et al. (US 6,253,830 B1) in view of Menon et al. (5,908,804) and further in view of Robinson et al. (3,763,830).

With respect to claim 3, though Bickford et al. discloses wherein maintaining an elevated temperature is essential to accomplish the decomposition of the bonding agent (col. 5, lines 56-60) and recovering a very high quality of recovered sand (col. 5, line 66-col. 6, lines 6), Bickford et al. and Menon et al. fail to disclose wherein the gas phase distributor further comprises a heat exchanger in a feed line to the gas phase distributor such that the heat exchanger location is above the fluidizing gas distribution ports and submerged in the fluidized solids.

Robinson et al. discloses a fluidized bed combustion apparatus where distribution is required in the fluidized bed, such as in the modified apparatus of Bickford et al. Robinson et al. discloses wherein a heat exchanger feed line (38) is located above the distribution ports (33, 34, 35) and submerged in the fluidized bed (30) in order to control operating temperature (col. 7, lines 39-54). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the heat exchange teaching of Robinson et al. in the apparatus of Bickford et al. in order to provide greater control of temperature and ensure operation of the temperature conditions required by Bickford et al.

Response to Arguments

Election/Restriction

The examiner would like to note that a requirement was made in the final rejection (paragraph 2) that a complete reply must include cancellation of the non-elected claims or other appropriate action. No such actions were taken by applicant, but in order to expedite prosecution of the application the reply has not been held as non-responsive.

35 USC 112, Second Paragraph

The 35 USC 112, second paragraph rejection is withdrawn due to applicant's amendment to the claims as well as the indication of figures 4 and 5 to support such an amendment.

35 USC 102 Rejections

Applicant's arguments with respect to the 35 USC 102 rejection of claims 1-2 are directed to the claims as presently amended and therefore are considered moot.

35 USC 103 Rejections

Applicant states that Menon does not disclose "tuyeres" in a perpendicular orientation but has not submitted evidence to support such a statement.

Despite the lack of evidence to support such a statement the examiner provides the following response: the figures of Menon disclose two views of the "tuyeres" (nozzles 20) in figures 1 and 2 equivalent to the views of applicant's application. Applicant has stated that one skilled in the art upon review of two such views will

"clearly recognize that the "tuyeres" are in a perpendicular orientation" (p. 6 of applicant's remarks).

Applicant's remaining arguments with respect to the 35 USC 103 rejection of claims 1-7 are directed to the claims as presently amended and therefore are considered moot.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexa A. Doroshenk whose telephone number is 703-305-0074. The examiner can normally be reached on Monday - Thursday from 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Please make note that after December 10, 2003, the examiner can be reached at her new telephone number 571-272-1446 and the examiner's supervisor, Glenn Caldarola, can be reached at his new phone number 571-272-1446.



Alexa Doroshenk
Patent Examiner
Art Unit 1764

Application/Control Number: 09/663,995
Art Unit: 1764

Page 7

November 20, 2003